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PROJECT COMPLETION REPORT

KOREA

**SECOND GWANGJU REGIONAL PROJECT
(LOAN 1758-KO)**

DECEMBER 29, 1989

**Infrastructure Operations Division
Country Department II
Asia Regional Office**

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

ABBREVIATIONS AND ACRONYMS

ERR	-	Economic Rate of Return
GRCO	-	Gwangju Regional Construction Office
GRDU	-	Gwangju Regional Development Unit
GRP	-	Gross Regional Product
ICB	-	International Competitive Bidding
IRCO	-	Iri Regional Construction Office
MOC	-	Ministry of Construction
NFFC	-	National Federation of Fisheries Cooperatives
PCR	-	Project Completion Report
Py	-	Pyong (equivalent to 3.307 sq. m)
UNDP	-	United Nations Development Programme

Office of Director-General
Operations Evaluation

December 29, 1989

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on Korea - Second
Gwanju Regional Project (Loan 1758- KO)

Attached, for information, is a copy of a report entitled "Project Completion Report on Korea - Second Gwanju Regional Project (Loan 1758-KO)" prepared by the Asia Regional Office. No audit of this project has been made by the Operations Evaluation Department at this time.

Attachment

A handwritten signature in black ink, appearing to be 'L. P. Hwang', is written over the word 'Attachment'.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Table of Contents

	Page No.
PREFACE	i
BASIC DATA SHEET	ii
HIGHLIGHTS	v
I. INTRODUCTION	
A. The Gwangju Region	1
B. Project Background	1
II. PROJECT IDENTIFICATION, PREPARATION AND APPRAISAL	
A. Project Preparation	2
B. Project Appraisal	3
III. THE PROJECT	
A. Project Objectives	5
B. Project Description	5
C. Project Processing	6
IV. IMPLEMENTATION	
A. Project Start-up	6
B. Revisions in the Project	8
C. Physical Progress	10
D. Project Cost and Financing	11
E. Disbursements	11
F. Procurement	12
G. Performance of Consultants, Contractors and Suppliers	12
H. Compliance with Loan Covenants	13
I. Reporting and Audits	13
V. INSTITUTIONAL PERFORMANCE	
A. Performance of the Implementing Agency	13
B. Performance of the Bank	14
VI. PROJECT JUSTIFICATION	
A. Strengthening the Economic Base	14
B. Economic Re-evaluation	15
VII. LESSONS LEARNED	18

Table of Contents (Continued)

ANNEXES

1. Appraisal and Actual Implementation Schedule	21
2. Comparison of Appraisal and Actual Project Costs	22
3. Financing Plan	23
4. Disbursement of Loan by Category	24
5. Estimated and Actual Accumulated Disbursements	25
6. Summary of Contracts	26
7. Covenants in Loan Agreement	27
8. Economic Re-Evaluation	31
9. Gwanju City Finances	38
10. Comments from the Borrower	41

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

PREFACE

This is a Project Completion Report (PCR) for the Second Gwangju Regional Project (Loan 1758-KO) for which a loan of US\$65 million was approved by the Board on September 11, 1979. Under Subsidiary Loan Agreements, the proceeds of the loan were on-lent to City Governments of Gwangju, Mogpo, and Yeosu, the Government of Goheung County and the National Federation of Fisheries Cooperatives. The on-lent funds carried the same term and grace period as the Bank loan but at an interest rate which was 0.05% per annum higher than the Bank loan rate. The loan closed on June 30, 1985, and the final disbursement was made in December 1985. Due to cost savings under the project resulting from a substantial devaluation of the won, US\$12.78 million of the loan funds were cancelled at the Government's request in October 1984 and another US\$1.02 million were cancelled in December 1985.

The PCR was prepared by staff of the Infrastructure Operations Division, Country Department II, Asia Regional Office, based on documents contained in the project file. Comments were received from the Ministry of Construction, the agency primarily responsible for project implementation.

This PCR was read by the Operations Evaluation Department (OED). The draft PCR was sent to the Borrower for comments and they are attached to the Report as Annex 10.

PROJECT COMPLETION REPORT

COUNTRY
NAME OF PROJECT
(LOAN/CREDIT NO.)

BASIC DATA SHEET

KEY PROJECT DATA

<u>Item</u>	<u>Appraisal Expectation</u>	<u>Actual or Current Estimate</u>	<u>Actual as % of Appraisal Estimate</u>
Total Project Costs (US\$ million)	154.8	148.7	96.1%
Loan Amount (US\$ million)	65.0	51.2	78.8%
Cofinancing-Total (US\$ million)			
ADAB			
CIDA			
KfW			
NORAD			
ODA			
SIDA			
Date Physical Components Completed	12/31/83	12/31/85	
Proportion completed by that date (%)	100%	100%	
Economic Rate of Return	23%	12%	
Institutional Performance	Satisfactory	Satisfactory	

CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS

	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>
Appraisal Estimate (US\$ million)	1.50	16.50	41.30	63.20	56.00		
Actual (US\$ million)	0.00	4.06	11.81	24.69	46.85	50.77	51.20
Actual as % of Appraisal (%)							
Date of Final Disbursement: December 30, 1985							

PROJECT DATES

	<u>Original Plan</u>	<u>Revisions</u>	<u>Actual</u>	<u>Actual as % of Original Plan</u>
First Mention in Files	4/72		10/80	
Negotiations	-		6/25-29/79	
Board Approval	-		9/11/79	
Signing (Credit Agreement Date)	-		9/27/79	
Effectiveness	-		2/15/80	
Closing Date	6/30/84		6/30/85	

* Use PROGRAM in the case of SAL audits.

STAFF INPUTS
(staff weeks)

<u>TOTAL</u>	<u>FY77</u>	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
Identification/ Preparation 103.9	0.3	39.6	64.0										
Appraisal 131.1			131.1										
Negotiations 41.3			17.2	24.1									
Supervision 133.8				27.3	32.4	23.7	20.4	12.4	5.2	0.2	12.2		
Subtotal 410.1	0.3	39.6	212.3	51.4	32.4	23.7	20.4	12.4	5.2	0.2	12.2		

MISSION DATA

	<u>Date</u> <u>(mo./yr.)</u>	<u>No. of</u> <u>Persons</u>	<u>Specializations</u> <u>Represented</u>	<u>Performance</u> <u>Rating</u>	<u>Trend</u>	<u>Types of</u> <u>Problem</u>
Identification	12/76	2	EC EG	-	-	-
Preparation	3/78	4	2 EG FS US	-	-	-
Preappraisal	7/78	7	2 EG FS 2US TS FA	-	-	-
Appraisal	10/78	9	2EG 2FS US 2FA A S	-	-	-
Post-Appraisal	2/79	5	2 EG 2FS A	-	-	-
Supervision I	10/79	4	EG FA A EC	1	1	F
Supervision II	5/80	6	EG FA A 3EC	1	1	F T
Supervision III	8/80	5	3EG FA FC	2	1	F T
Supervision IV	4/81	3	EG 2EC	2	2	F
Supervision V	9/81	2	EG EC	2	2	F
Supervision VI	1/82	2	EG EC	2	2	F
Supervision VII	5/82	2	EG EC	2	1	F
Supervision VIII	11/82	3	EG EC FA	1	2	F
Supervision IX	10/83	2	EG EC	1	2	F T
Supervision X	7/84	1	EC	1	2	F
Supervision XI	11/84	1	EC	1	2	-
Supervision XII	4/85	2	EC EG	1	2	-
Completion	11/86	3	EC FA RA	-	-	-

EC = Economist, EG = Engineer, FS = Fishery Specialist, US = Urban Specialist
TS = Transport Specialist, FA = Financial Analyst, A = Architect, S = Secretary
RA = Research Assistant

OTHER PROJECT DATA

Borrower: Government of Korea
Executing Agency: Ministry of Construction

Follow-On Projects:

Name	Jeonju Regional Project
Credit Number	LN 2388-KO
Amount (US\$ million)	60.0
Approval Date	13 March 84

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

HIGHLIGHTS

1. The Second Gwangju Regional Project (Ln. 1758-KO), like its predecessor, the Secondary Cities Regional Project (Loan 1070-KO), was designed to support the Government's strategy for reducing regional imbalances in the country's economic development through industrial decentralization, development of secondary cities and increased primary sector productivity in the Gwangju Region, one of the poorest, least developed regions of the country. Specifically, the project aimed at. (a) promoting industrialization in the region's cities in order to expand employment opportunities; (b) improving living conditions in the urban areas; and (c) increasing the income-earning opportunities of the region's island population through improved transport linkages and fisheries activities.

2. The project as appraised included the provision of: (a) housing estates in the major regional cities of Gwangju, Mogpo and Yeosu totalling nearly 3,950 serviced residential plots, some with expandable core houses; (b) about 200 ha of serviced industrial land in Gwangju and Mogpo; (c) improvements to water supply systems in Mogpo, Yeosu and the Narodo Islands; (d) construction of two bridges to link Dolsan and Jindo Islands to the mainland, improvements to 1.9 km of commercial road in Yeosu and ferry service between Narodo Island and the mainland; (e) an aquaculture development program to enhance fishermen's incomes and a shrimp storage facility at Imja Island; and (f) technical assistance (para. 3.2). A Bank loan for US\$65 million was approved by the Board in September 1979 to assist in financing the project's total estimated cost of W 75.1 billion (US\$154.8 million).

3. The project was initiated at a time when the Korean economy had begun to deteriorate after the oil price increases of 1979. Higher than expected inflation led to project cost increases while the tight budgetary situation, of both the central government and the project cities, resulted in delays which could not be made up during the subsequent implementation period (paras. 4.2 and 4.3). The project was therefore completed two years later than expected, in December 1985 rather than December 1983 as originally planned, and loan closing had to be extended by one year, from June 30, 1984 to June 30, 1985. Actual project costs totalled W 104.8 billion (US\$141.1 million). While the project experienced costs overruns in won terms, costs were less than expected in US dollar terms due to the devaluation of the won. As a result, savings of US\$13.8 million of the loan amount were cancelled.

4. The project underwent several changes during implementation, the major changes being as follows: (a) the design of the Dolsan Bridge was changed from a steel box girder suspension bridge to a more expensive cable stay suspension bridge; (b) a separate water supply system was added to the

Gwangju industrial estate due to delays in expanding the Gwangju City system; (c) the Mogpo industrial estate and related works, cancelled due to projections of higher than expected costs and sluggish demand, were replaced with other high priority investments, i.e., land readjustment scheme and a drainage improvement, also for Mogpo; and (d) the aquaculture development component for the production of laver, an edible seaweed, was reduced due to overproduction and a consequent lack of farmer enthusiasm for further investment (para. 4.5).

5. The project succeeded in accomplishing its objective of providing industrial employment opportunities through the construction of the Gwangju industrial estate which has been fully sold out and is expected to employ about 10,000 workers (para. 6.2). The water supply components have improved living conditions in the area while housing provided under the project has increased the housing supply in the project cities. Project investments to establish a road link between the mainland and Jindo Island, noted for its coastline and beaches, should enhance the Island's tourism potential, particularly in view of the rise in domestic tourism expected as a result of increasing incomes (para. 6.5). Cable stay bridge technology was transferred to Korean contractors through the construction of the Jindo and Dolsan Bridges (4.14). The project did not, however, contribute to development of aquaculture in the region due to the major cut-back in the aquaculture component. Overall, the major project components, accounting for 77% of total projects costs, have weighted average economic return of 12%, rather lower than the 23% return estimated at appraisal due to cost increases resulting from the longer than expected implementation period (paras. 6.6 and 6.7).

6. While the project is estimated to have accounted for less than 10% of total government resources invested in the Gwangju Region during the project period, it did play a major role in financing investments in the project cities, which are constrained by their limited revenue base and lack of access to external financing (para. 7.3). Implementation of the project was largely hampered by two factors: first, some project components were identified somewhat late in the project preparation process and may not have been sufficiently prepared; and second, the need to provide counterpart funds for all project components simultaneously strained the local government budgets. In the future, regional development project should also consider formulating an institutional framework for identifying and implementing projects which could include:

- (a) a regionalized allocation of central government resources, with regional breakdowns of annual budgets; and
- (b) mechanisms by which local governments (whether provincial, city or county) could themselves implement the regional projects. This might require development of a financing scheme, e.g., a Regional Development Fund, and, where the local governments lack the technical capabilities for project implementation, the appointment of a central government agency such as the Ministry of Construction to carry out works on behalf of the local government or the establishment of a separate agency, e.g., a Regional

Development Corporation, to assist the local governments where necessary.

The development of such an institutional framework would be a medium term objective to be achieved through a series of regional development projects, starting off with selected investments carried out in the target region through a central government agency along the lines of the regional development projects in Korea.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

I. INTRODUCTION

A. The Gwangju Region

1.1 The Gwangju Region, consisting primarily of Jeonra Nam Province,^{1/} is one of the poorer regions in Korea. Located in the southwestern part of the country, the province has traditionally been an agricultural center, and did not benefit from the rapid industrial development of the late 1960s and 1970s which was concentrated around Seoul, in the northwest, and Pusan and Taegu, in the southeast. Agriculture and fisheries continue to be the main economic activities of the province, and in 1978, when the Second Gwangju Regional Project was being prepared, per capita Gross Regional Product (GRP) in Jeonra Nam Province was about 80% of the national average and 60% of the GRP of Seoul.

1.2 In 1980, the province had a population of 3.8 million or 10% of Korea's total population. Its urban population of 1.2 million was spread out in four cities: Gwangju (population 727,600, the fifth largest city in Korea), Mogpo (population 221,814), Yeosu (population 160,988) and Suncheon (population 114,241). The urbanization rate in the province in 1980 was 32% compared to 57% for Korea as a whole. Between 1975 and 1980, the province's urban population rose from 1.0 million to 1.2 million, while the total population dropped from 4.0 million to 3.8 million owing to a general movement of the population from the poorer provinces to Seoul.

B. Project Background

1.3 The Government of Korea has been concerned about the regional distribution of economic growth in the country since the 1960s. To address the perceived imbalance in development, in 1971 the Ministry of Construction (MOC) issued the First Comprehensive National Land Development Plan (1972-81) which provided a blue print for future infrastructure investment in the country. The Plan divided the nation into eight regions and outlined the broad investment priorities for each region. Detailed investment plans were prepared for three of the regions with the help of foreign assistance: the United Nations

^{1/} The report uses the McCune-Reischauer System for spelling Korean place names to be consistent with the appraisal report. Under the alternative Ministry of Education System which is now more widely used by the Government, "Jeonra Nam Province" would be spelt "Cholla Nam Province" and "Gwangju Region" spelt "Kwangju Region."

Development Programme (UNDP) provided financing for the Gwangju and Taebag plans while the Jeonju plan was funded by a grant from the Canadian Government. The Gwangju Regional Study, undertaken by Robert R. Nathan Associates during 1974-75, provided the basis for this project as well as its predecessor, the Korea Secondary Cities Regional Project (Loan 1070-KO), approved in 1975. The Secondary Cities Project financed housing sites and services in Gwangju, Mogpo and Yeosu Cities, a fishery harbor complex in Yeosu City, a market in Suncheon City, roads in Mogpo and Yeosu Cities, and technical assistance. Utilizing savings under the loan due to a significant devaluation of the won in 1974, funding for several additional components, including a water supply system for Yeosu City and several studies, was also provided under the project. In line with the project's institutional objectives, a Gwangju Regional Development Unit (GRDU) was established under the Ministry of Construction (MOC) to implement the project. The GRDU was subsequently incorporated into the MOC's Gwangju Regional Construction Office (GRCO).^{2/} The Secondary Cities Project was completed in 1980 at a total cost of W 15 billion (US\$25 million), somewhat higher than the estimated cost of W 10 billion at appraisal due to the additional costs of components added during implementation. A Project Performance Audit Report for the Secondary Cities Project (No. 5609) found that the project had had mixed results and that its impact was somewhat less than expected at appraisal. However, the audit found that institutional arrangements under the project were quite successful and deserved to be replicated in other regions of Korea, but cautioned that the project should not be emulated as a model for planning and designing regional development programs. According to the PPAR, rather than constituting a cohesive set of investment that together would foster regional development, the project evolved into a collection of subprojects tied together by the fact that the same element was being repeated in different cities, and by the physical proximity of some of the components.

II. PROJECT IDENTIFICATION, PREPARATION AND APPRAISAL

A. Project Preparation

2.1 In November 1976, after the Secondary Cities Regional Project had begun, MOC suggested some additional components for Bank financing in the Gwangju Region, based on the findings of the Robert Nathan Study. The proposed investments addressed the needs of both the urban areas, through industrial development and infrastructure investments in the four major cities, and the rural areas, through agricultural storage and fishery development. Feasibility studies for these investments were funded under the Secondary Cities Project and carried out by consultants who were already providing technical assistance to

^{2/} The office was first named the Jeonra Nam Regional Construction Office (JNRCO), then subsequently renamed the GRCO. The GRCO was abolished and its operations integrated with MOC's Iri Regional Construction Office (IRCO) in Jeonra Bug Province during the government reorganization of 1981.

GRDU under the Secondary Cities Project. The feasibility studies were started in September 1977 and completed in June 1978. A Bank evaluation of the studies found them unsatisfactory since engineering design work had been carried out without adequately establishing the need for and appropriate scale of each component through an analysis of demand and alternative design solutions. As a result, the Bank had to provide additional resources during project preparation and appraisal to compensate for the shortcomings of the feasibility studies.

2.2 During project preparation, changes were made in the composition of components. First, housing components were identified in Gwangju, Mogpo and Yeosu in response to the acute housing shortage in the region and the favorable experience with housing estates under the Secondary Cities Project. Second, additional water supply components were identified for Gwangju and Yeosu. But due to the priority of these investments, they were for the most part initiated immediately, with funding under the First Water Supply Project (Ln. 20/2-KO) for the investments in Gwangju and under the first regional project for water source development, transmission and treatment facilities in Yeosu. The Yeosu distribution system was, however, financed under the Second Regional Project. Third, the fishery development component was determined not to be economically feasible and was therefore replaced by an aquaculture development component and by components for development of Narodo, a pair of islands off the mainland with good potential for tourism and fisheries. This reflected the Government's keen interest in assisting the less developed coastal and island areas in the region. The preparation of these additional components was carried out by GRDU with the assistance of local consultants and Bank staff.

B. Project Appraisal

2.3 The project was appraised in October/November 1978. The main issues raised with the Government at appraisal were the following:

- (a) Inclusion of Marginal Components: The Government was eager to include components to develop the poorer island and coastal areas of the province primarily for political reasons. However, most of the components identified for this target group were found to be economically and financially not feasible. The Bank mission proposed redesigning some components (i.e., ferry terminals instead of bridges for Narodo), identified new components (the aquaculture component to replace several fisheries-related components) and included technical assistance for an Island Development Study to address the needs of the coastal areas; and
- (b) Design Standards For Housing Estates: The Bank's primary objective in the housing sector was to construct affordable housing for the urban poor without government subsidies so that the program could be replicated on a larger scale

nationwide. In order to make the units affordable to the low income group, the Bank proposed expandable core houses one of 9 pyong (py) 3_/, about 30 sq m, and another of 12 py, about 40 sq m. The Government felt that these were too small and preferred to construct apartments with a larger unit size even if government subsidies were required to make them affordable to the target group.

Other issues raised by the mission were: (a) the financial strain of the project on the city budgets (especially Yeosu); (b) full cost recovery for the industrial estate; (c) the financial status of the Mogpo Water Bureau; and (d) the need for an urban plan for Dolsan Island.

2.4 The main issues raised during the Bank review of the project following appraisal were as follows:

- (a) Status of Project Preparation: The Yeosu and Narodo water supply components and the aquaculture component were either redesigned or identified late in the project (during preappraisal/appraisal) and were considered not fully prepared; and
- (b) Coordination Between Different Operations Within the Bank: Timely provision of water to the Gwangju industrial and housing estates depended upon the timing of the Bank's Secondary Cities Water Supply Project which was being prepared simultaneously, while an Agricultural Marketing Project was being prepared for implementation by the National Federation of Fishery Cooperatives (NFFC), also the implementing agency for the aquaculture component. Concern was expressed over the NFFC's financial situation and it was feared that implementation of a separate Bank project might undermine efforts to improve NFFC's financial performance.

2.5 The Bank agreed to a post-appraisal mission (in February 1979) to finalize the aquaculture component with the participation of staff preparing the Agricultural Marketing Project. Although the mission was not completely satisfied with NFFC and did recognize it may complicate later efforts under the Marketing Project, it was decided to proceed with the aquaculture component because of its importance to the project and its small size relative to NFFC's total operations. The Bank also included a covenant in the Loan Agreement requiring timely provision of water for the industrial and housing estates.

3_/ The pyong (py), a Korean unit of measuring area, is equal to 3.307 sq m.

III. THE PROJECT

A. Project Objectives

3.1 In order to promote development in the Gwangju Region, the project aimed at: (a) promoting industrialization in the region's cities to expand employment opportunities; (b) improving living conditions in the urban areas; and (c) increasing the income-earning opportunities of the region's island population through improved transport linkages and fisheries activities.

B. Project Description

3.2 The project, as appraised, consisted of the following components:

- (a) Housing (US\$44.6 million): Provision of nearly 3,950 serviced residential plots in the cities of Gwangju, Mokpo and Yeosu, with expandable core-houses designed mostly for low-income families.
- (b) Industrial Estates (US\$64.7 million): Provision of about 200 ha of serviced industrial land in Gwangju and Mokpo to accommodate 16,000 to 20,000 employees.
- (c) Water Supply (US\$13.4 million): Improvements to water supply systems in Mokpo, Yeosu and Narodo including transmission, treatment, and distribution and operations.
- (d) Transportation (US\$19.5 million): Construction of two bridges to link the islands of Dolsan and Jindo to the mainland and improvements to a 1.9 km commercial road in Yeosu and ferry service between Narodo and the mainland.
- (e) Fisheries (US\$7.0 million): Provision of a shrimp storage facility and an aquaculture development program aimed at enhancing fishermen's incomes.
- (f) Technical Assistance (US\$5.6 million): Provision of assistance for regional planning, including an island development study as well as aquaculture development, water supply system operation and management, and preparation of a third regional project.

3.3 With the exception of the aquaculture development program which was implemented by NFFC, project design and construction were carried out by MOC. Overall project coordination was carried out through MOC's Regional Planning Division in Seoul, while review of detailed designs, procurement and construction supervision were carried out by MOC's regional offices (GRCO and then IRCO). Gwangju, Mokpo and Yeosu Cities were responsible for land acquisition, financing and operation and maintenance (upon completion) of the housing, industrial estate, water supply, and Yeosu commercial road components.

3.4 The total project cost was estimated at W 75.1 billion (US\$ 154.8 million). A Bank loan of US\$65 million was provided to cover the estimated foreign exchange requirements of the project (42% of total project costs), with the balance of financing to be provided by the cities (27%), central government budget funds (13%), the Korea Housing Bank (13%), the Korea Development Bank (3%) and the National Federation of Fishery Cooperatives (2%). About US\$46 million of the Bank loan was on-lent to Gwangju City, Mogpo City, Yeosu City, Goheung County Government and NFCC. Signing of Subsidiary Loan Agreements between the Ministry of Finance and the local governments and NFCC was a condition of loan effectiveness.

C. Project Processing

3.5 The loan was negotiated in June 1979, approved by the Bank's Board on September 11, 1979, signed on September 27, 1979 and became effective on February 15, 1980.

IV. IMPLEMENTATION

A. Project Start-up

4.1 The economic situation in Korea deteriorated just as project implementation was beginning. The Korean economy, which had been averaging real GNP growth of over 10% per annum during the 1970s, entered into a recession in the second half of 1979 as a result of increased oil prices and the resulting slowdown of economic growth worldwide. The annual growth rates of nominal and real GNP for 1976 to 1985 are presented in Chart 1. Real GNP growth dropped from 9.7% per annum in 1978, to 6.6% in 1979 and to -6.6% in 1980. Both local and central government revenues, which had been growing at over 10% per annum in real terms during the 1970s, experienced negative growth in 1980. Wholesale prices, which had been increasing at around 10% per annum, showed an annual increase of 19% in 1979, 39% in 1980 and 20% in 1981. On the other hand, land prices which had been increasing in real terms during the 1970s began to stabilize, reducing the attractiveness of land as an investment. Land price increases in the medium-sized cities in Korea averaged well over 20% per annum in the late 1970s, peaking at 59% per annum or over 45% in real terms in 1978. However, Government intervention and economic recession reduced the growth in land prices which fell to an annual increase of only 15% (or about -4% in real terms) in medium-sized cities in 1979 to 14% (about -35% in real terms) in 1980 and to 9% (about -12% in real terms) in 1981. The annual growth rates of land prices, the GNP deflator and wholesale prices are compared in Chart 2.

4.2 The worsening economic situation had a negative effect on project start-up. The drop in central government revenues and high inflation led to a tightening of central government expenditures. Detailed engineering for the housing and industrial estates components was temporarily suspended in 1979/80 when the Economic Planning Board dropped this activity from the 1980 government budget on the grounds that it should be funded by the local governments. Central government

TABLE 1: GDP GROWTH RATES

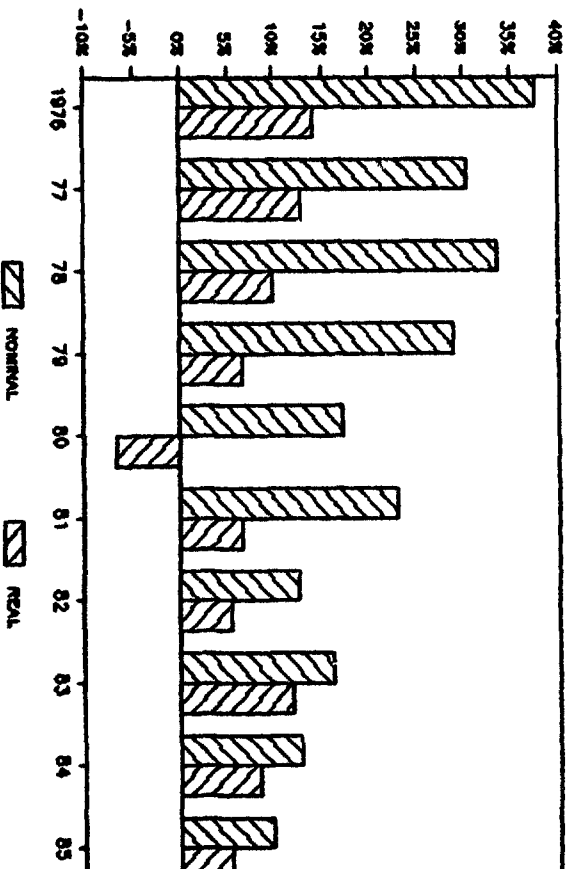
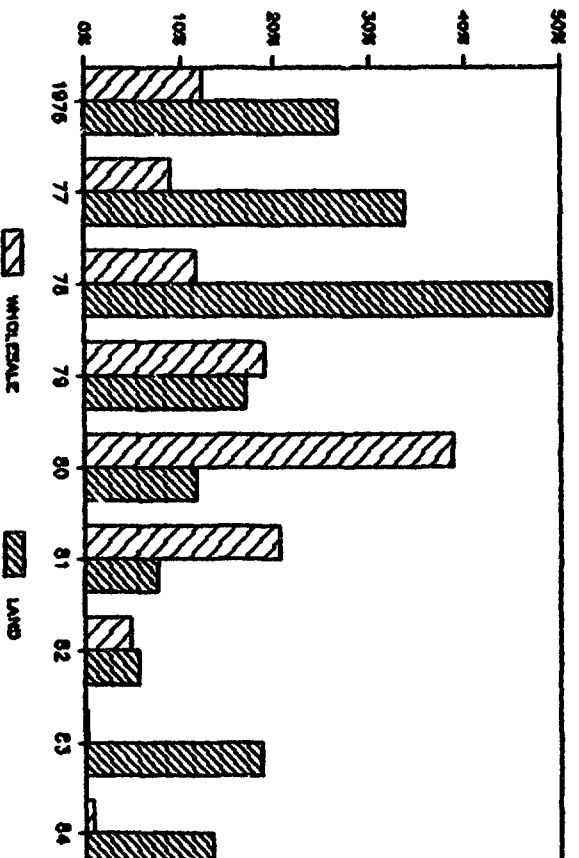


TABLE 2: COMPARISON OF PRICE INCREASES



funding was eventually restored and detailed engineering was completed in mid-1980. Budget difficulties also resulted in longer construction periods for the Jindo and Dolsan bridges.

4.3 Funding constraints also resulted in delays in land acquisition by the project cities for the housing estate, industrial estate, and Yeosu commercial road components. Local governments in Korea generally funded a greater part of land development projects, such as housing and industrial estates, through pre-sale. During the 1970s when land prices were increasing rapidly in real terms, people were willing to put down deposits for residential and industrial land yet to be developed. However, the land market cooled significantly after 1980 so that the project cities had difficulty mobilizing funding for land acquisition through pre-sales. The issue was resolved when the Ministry of Home Affairs, which oversees local government financing, gave approval in April 1981 to the project cities to borrow from commercial banks after turning down the cities' requests for grant assistance. As a result, construction in the three housing estates and the Gwangju industrial estate did not start in earnest until the third quarter of 1981 although the contracts were awarded and construction officially started in December 1980 and January 1981, respectively. The project cities continued to have difficulties with counterpart funding which resulted in the Bank's increasing the loan disbursement ratio on several components and agreeing to direct payments to suppliers (see para. 4.5).

4.4 The Mogpo industrial estate and access road components were re-evaluated in light of the changed economic outlook and significant increase in development costs which doubled from ₩ 8.6 billion at appraisal to ₩ 15.8 billion after detailed engineering due to higher land acquisition and land fill costs. A study by the Korea Research Institute for Human Settlements in November 1981 determined that the industrial estate was no longer feasible. The industrial estate and access road components were therefore dropped from the project and replaced with other high priority investments in Mogpo City (para. 4.5).

B. Revisions in the Project

4.5 During implementation, several revisions were made to the design of project components, project scope and disbursement arrangements. The major changes were as follows:

Design Changes:

- (a) Dolsan Bridge: Due to the foundation conditions of the bridge and marine traffic in the bridge area, the consultants responsible for detailed design of the bridge recommended a more expensive cable stay suspension bridge instead of the steel box girder suspension bridge originally proposed.
- (b) Separate Water Supply for Gwangju Industrial Estate: Delays in the expansion of Gwangju City's water system made it

necessary to develop a separate source of water supply for the industrial estate in order to market the estate upon completion. Therefore, the industrial estate civil works contract was extended to include some 26 km of transmission line and treatment facilities to provide 30,000 MT/day of water to the industrial estate at a cost of W 5.7 billion. The Loan Agreement was amended to accommodate the above change.

- (c) Minor Modifications: Other changes to the project design included: (i) a 20% reduction in the number of completed housing units (the area being sold as open lots targeted to the low-income group) in the Gwangju and Yeosu housing estates in order to reduce the cost of housing construction in view of the shortage of local funds; (ii) inclusion of a small earth dam, 3.2 km of raw water transmission and a booster station in the Narodo water supply component since utilization of groundwater was not feasible; (iii) modification of the Imja shrimp storage facilities, at the NFFC's request, to utilize the existing jetty and improve its truck access rather than constructing a new jetty with a rail link; and (iv) addition of drainage works in the Mogpo housing estate.

Project Scope:

- (a) Cancellation of the Mogpo Industrial Estate and Access Road: These components were dropped due to higher costs and projected sluggish demand for industrial land in Mogpo (para. 4.4) and were replaced with other high priority investments: (i) the Juksan Land Readjustment Scheme, and extension of the Mogpo housing estate in line with the project's overall objective to provide affordable low-income housing; and (ii) the Mogpo drainage improvement scheme involving upgrading of two major drainage channels to reduce flood damage during heavy rainfall. The Loan Agreement was amended in 1982 to accommodate the above changes.
- (b) Aquaculture: This component was intended to expand laver (edible seaweed) production to meet domestic demand and increase the incomes of laver farmers, one of the poorest groups in the rural population. However, production of laver exceeded government projections and the resulting oversupply dampened the farmers' enthusiasm for further investments in facilities. The Government restricted increases in new floating net units (which were intended to replace the outdated and less productive bamboo slat growing units), making loans for net units impossible. Therefore, NFFC requested and the Bank agreed to reduce the program to one year, eliminate the floating net units altogether, and limit the facilities to only those for which subborrowers had already been selected. The program as completed consisted of three seed culture facilities, 13 processing facilities and one net freezing facility.

Changes in Disbursement:

- (a) Disbursement Ratios. In order to reduce the financial burden on the cities and facilitate project implementation, the Bank increased disbursement ratios on the following components: (a) the Gwangju industrial estate (including the water supply component) from 44% to 55% (Bank letter of November 30, 1982); (b) the Yeosu commercial road from 44% to 80% (Bank letter of November 30, 1982); and (c) Mogpo City inner drainage from 44% to 74% (Bank letter of September 15, 1983). Even at the higher disbursement ratios, the Bank loan still exceeded the estimated foreign exchange requirements of the project. The disbursement ratio was also increased for consultant's services from 60% of total expenditures to 100% of foreign expenditures and 60% of local expenditures (March 30, 1981) and overseas training from 100% of foreign expenditures to 100% of total expenditures in order to facilitate the processing of these expenditures (February 14, 1983).
- (b) Disbursement Procedures. Due to budgetary shortages, the cities were having difficulties in mobilizing funds to make payments to contractors prior to seeking Bank reimbursement. In order to ease the cities' cash flow requirement and accelerate disbursements, the Bank agreed to pay the contractors directly (Procedure III: Application for Direct Payment) on condition that the cities give assurances that the local counterpart funds would be forthcoming in a timely manner (letter of November 22, 1983).

C. Physical Progress

4.6 Actual implementation of the project was completed in November 1985, about two years behind the original completion date of December 1983. A comparison of the planned and actual implementation schedules is given in Annex 1. The closing date of the project was extended by one year to June 30, 1985. 4/

4.7 The slower than expected physical progress resulted from delays during the start-up period (paras. 4.2 and 4.3) which could not be made up during the latter part of implementation. Construction of the project bridges, for example, was constrained by government budgetary problems which caused the demobilization of the contractor for the Jindo Bridge in September 1981, well before the end of the construction season. The Government was also initially reluctant to field a full construction supervisory team for the Dolsan Bridge (proposing to use part-time inputs from the Jindo supervisory team) as

4/ Although the Mogpo Drainage component was not completed at the time of loan closing, no extension of the closing date was sought since the contract was on-going and all disbursements were expected to be completed by December 1985, or within 6 months of the revised closing date.

a cost-cutting measure. This arrangement was unsatisfactory and the matter was resolved only after the Bank had suspended disbursements on the Dolsan Bridge in August 1982. Land acquisition problems resulted in further delays of the Gwangju housing estate, due to the holdout of one owner, and the Juksan land re-adjustment component due to lack of funds.

D. Project Cost and Financing

4.8 Total project costs were significantly higher than estimated at appraisal in won terms but were slightly below the estimate in terms of US dollars. The total project cost at appraisal was W 75.1 billion (US\$154.8 million equivalent) including taxes, duties and contingencies. Actual costs totaled W 104.8 billion (US\$141.1 million equivalent), an increase of 40% in won terms but a decrease of 9% in US dollar terms. A detailed comparison of actual and estimated costs is shown in Annex 2. The higher won costs were due to a combination of higher inflation than estimated, longer implementation periods, and some design changes (para. 4.5). The greatest price increases were related to the two bridges. At the time of appraisal, inflation in Korea was projected at 10% in 1979, 9% in 1980 and 8% thereafter. In reality, wholesale prices rose by 19% in 1979, 39% in 1980, 20% in 1981, then dropped to 5% in 1982, and remained below 1% p.a. thereafter. The savings in US dollar terms was due to a devaluation of the Korean won following the Government's decision to move from a fixed exchange rate to the dollar to a floating rate system. As a result, the won depreciated from W 484 to the dollar in 1979 to W 660 by end-1980 and eventually to W 870 by 1985, the last year of implementation.

4.9 The cost overruns aggravated the already difficult local funding situation, both in the central and local governments (paras. 4.2 and 4.3). Financing for the project was provided by the Bank (37%), the Central Government (24%), local governments (22%), the Korea Housing Bank (14%), the Korea Development Bank (2%) and the National Federation of Fisheries Cooperatives and the Shinan County Cooperative (1%). Annex 3 provides a detailed breakdown of the financing plan.

E. Disbursements

4.10 The loan was disbursed over six years, or one and a half years longer than the appraisal estimate of 4 1/2 years. However, actual performance still compares favorably with the disbursement profile for Korea which shows disbursements averaging six years. Disbursement of the loan did not begin until two years after loan effectiveness. Bank guidelines at the time when this project was prepared did not require that detailed engineering be completed prior to Board presentation. Therefore, delays in detailed engineering (para. 4.2) led to delays in project start-up, which was further delayed by land acquisition problems (para. 4.3). Disbursements from the various categories of the loan are shown in Annex 4. A comparison of cumulative loan disbursements with the appraisal estimate is shown in Annex 5.

4.11 Even with the increased contract costs in won terms, the devaluation of the won resulted in savings in the loan amount in US dollar terms. As a result, a total of US\$13.8 million (21%) of the original loan amount was cancelled, US\$12.78 million on October 9, 1984 at the request of Government and US\$1.02 at the time of loan closing on December 18, 1985. MOC fully utilized its loan allocation due to cost overruns on the bridges. Savings under the loan occurred in the local government components.

F. Procurement

4.12 Procurement under the project was satisfactory. The bulk of procurement for civil works was carried out by GRCO, which had experience with Bank procurement procedures due to its responsibilities as the primary implementing agency for the Secondary Cities Project (Ln. 1070-K0). The project was advertised in August 1979 in accordance with ICB procedures for prequalification. As in many other projects in Korea, only local contractors applied to be prequalified, many of the regional contractors. Fifty three were prequalified for the project and six were qualified for the cable stay bridges. Because of the complex construction techniques involved in bridge construction and the limited experience of local contractors with such techniques, the six contractors were asked to enter into joint venture arrangements with foreign contractors who had experience in construction of cable stay bridges. Project contracts are summarized in Annex 6.

4.13 NFFC requested changes in procurement of laver processing equipment from ICB to prudent shopping since these machines were produced by only 11 firms in Japan and Korea. In order to expedite implementation, the Bank agreed to international prudent shopping, allowing direct contact with all 11 manufacturers (in lieu of advertising), a 45-day tender period and simultaneous provision of tender documents to the suppliers and the Bank.

G. Performance of Consultants, Contractors and Suppliers

4.14 The consultants, contractors and suppliers performed satisfactorily. However, the foreign consultant firm supervising the cable stay bridge had some difficulty in its relationship with GRCO due to characteristics of the business culture in Korea. For example, the consultant and GRCO differed in their perception of safety considerations in bridge construction. The consultant felt that the Korean contractors were cutting corners and jeopardizing quality to reduce costs and meet the implementation schedule, while the Koreans considered the consultants to be excessively cautious, to the point of being obstructive. Despite these difficulties, the consultant played a very important role in providing quality control. Since these were the first major cable stay bridges built in Korea, the foreign consultants were critical in transferring cable stay bridge technology to the MOC and the local contractors.

H. Compliance with Loan Covenants

4.15 There were no major problems with compliance with loan covenants. Annex 7 summarizes the major covenants contained in the loan agreement and the status of compliance.

I. Reporting and Audits

4.16 Submission of progress reports was satisfactory. Twenty bimonthly progress reports prepared by the local consultants supervising all construction except for the bridges were submitted as planned between October 1980 and December 1983. Fifteen bimonthly progress reports prepared by the consultants supervising bridge construction were submitted to the Bank from July 1982 to November 1984. These reports were also used by GRCO and MOC for monitoring the progress of the project. GRCO provided audited project accounts, prepared by external private auditors, for fiscal years 1980 to 1985 in accordance with the Loan Agreement.

V. INSTITUTIONAL PERFORMANCE

A. Performance of the Implementing Agency

5.1 The performance of implementing agencies was generally satisfactory. GRCO, the main implementing agency, performed extremely well. Despite some problems with delays in land acquisition experienced during the start-up period, GRCO, the cities and the provincial government have worked closely together both during project preparation and implementation. As a result, there have been no "turn-over" problems, such as refusal by local governments to accept the completed project or disputes over design standards, which typically occur when a national government agency constructs a project on behalf of local governments and turns it over to the local government for operation and maintenance upon completion.

5.2 Implementation of the aquaculture component was coordinated by NFFC's International Banking Department which was not responsible for actually carrying out the component. The component was only a very small part of NFFC's overall operations. The status of the aquaculture program within NFFC's regular operations and its relationship with the Government's aquaculture program being promoted by the Office of Fisheries were not clear. As a result, the component never got off the ground and eventually was cut back significantly during implementation (para. 4.5).

5.3 Ironically, the difficulty in implementing the aquaculture program and resulting cut-back may have reduced the damage which resulted from overinvestment by farmers in laver processing equipment. The return from investing in laver processing equipment was initially considered to be so lucrative that many farmers and cooperatives purchased equipment with loans from local banks. This led to overproduction of higher quality laver, a drop in prices and losses to many investors. As of November 1986, all but one of the 17 sub-

borrowers under the aquaculture program were in arrears in servicing their loan obligations to NFFC.

B. Performance of the Bank

5.4 The Bank's participation in the project allowed the Government to complete the regional planning and development process that started with the UNDP-funded regional development studies in the early 1970s (para. 2.1). The Bank provided financing for a multi-year comprehensive regional project involving both national and local government agencies. Furthermore, the Bank's intervention assisted the Government to rationalize the project, select the least-cost option and drop some doubtful projects (para. 2.3). The Bank played a role in transferring cable stay bridge technology through the inputs of consultants during supervision missions.

5.5 Within the Bank, the project also brought out the difficulties of dealing with projects which cut across traditional sectoral lines. While the aquaculture component addressed the economic needs of the poorer island areas of the region -- a major priority for both the Bank and the Government under the project, the Bank may have acted too hastily in developing the component for inclusion in the project, especially considering that laver production is carried out only in Korea and Japan, the Bank has no expertise in this activity and many questions had been raised on the institutional capacity of NFFC. On the other hand, the need to have all components (some of which had been under preparation for some time while others like the aquaculture component had been only identified late in the project cycle) appraised simultaneously, forced the Bank appraisal team to decide to include the component prematurely.

5.6 All components of the project were supervised by the Urban and Water Supply Division of the East Asia and Pacific Projects Department. During the implementation period, a total of 12 supervision missions visited Korea, with an average of about seven staff-weeks per year spent on supervision in the field. The Bank supervision missions supported MOC's efforts to obtain appropriate budget resources, and as a result of this intervention (not only limited to this project), the Government began adopting multi-year rolling budgets for Bank-assisted projects which facilitated planning over the life of the project. The quality of the working relationship between the Bank and MOC, NFFC and the local governments was excellent. The Bank also responded to the Government's request to provide an outside expert on bridge construction and contributed significantly to technology transfer in cable stay bridge construction.

VI. PROJECT JUSTIFICATION

A. Strengthening the Economic Base

6.1 Since the project was only completed in 1985, it is still too early to assess its overall development impact on the Gwangju Region

as a whole. However, the project can be said to have had a positive effect in strengthening the economic base of the region through industrial development in Gwangju and potential tourism development in the coastal areas.

6.2 The Gwangju industrial estate is expected to have a significant effect on promoting industrial development in the region. At full utilization, the estate will contain a total of 110 factories, with electronics and chemicals accounting for 30% and 20% of the factories, respectively. Total employment in the estate is expected to be between 9,000 to 10,000. As of end-1986, 51 factories were in operation, employing a total of 4,288 persons. For comparison, the total number of people employed in manufacturing in the Gwangju Region in 1982 (the latest year for which data are available) was 63,349.

6.3 The majority of factories (about 75% of the total) are being established by local firms, with 29% relocating from an existing industrial estate. Of the factories being established by non-regional firms, 22 (20%) are from Seoul. Two major electrical companies, Daewoo and Goldstar, together purchased about 32% of the industrial estate area after representatives of Gwangju City and the local chamber of commerce actively promoted the estate in Seoul, Pusan and other major industrial areas. At W 50,000 per py, the sales price was competitive compared to Seoul and Pusan where industrial land prices were over W 100,000 per py. Gwangju City also provided a pool of cheaper labor and a market for manufactured goods.

6.4 The industrial estate is considered a success, and Gwangju City is planning to develop an additional 340,000 py adjacent to the estate, with assistance from the Korea Land Development Corporation.

6.5 The project also encouraged tourism in the Gwangju area. With the rise in per capita incomes, domestic tourism is expected to increase throughout Korea. The coastal areas of Jeonra Nam Province retain a natural beauty which should be attractive to local tourists. In view of the country's well developed highway system, the proximity of Jeonra Nam Province to Pusan and other cities in the southeast (only about several hours drive by expressway), and the increase in privately-owned motor vehicles in Korea, an increasing number of tourists can be expected to travel by car to the region. The Jindo and Dolsan bridges constructed under the project should facilitate this tourism by providing direct links between the mainland and Jindo and Dolsan Islands. The bridges, the first cable stay bridges in Korea, could well become tourist attractions in their own right.

B. Economic Re-evaluation

6.6 An economic re-evaluation was carried out to assess the project's expected outcome. Given time and data constraints, it was not possible to re-evaluate all project components; therefore, economic rates of return (ERRs) were estimated for the project's key components -- those for transportation, housing estates and the industrial estate. Together, these components account for about 77% of total project costs. The methodology used in the re-evaluation

follows that used at the time of appraisal. A summary of the calculations is shown in Annex 8.

6.7 The weighted average ERR of the key project components is 12%. This is lower than the weighted average of 23% estimated for the entire project at appraisal, largely due to higher-than-expected costs of the bridges and road constructed under the project and slower-than-expected sales (and thus benefits) of the housing developed. Nevertheless, this rate of return is considered sufficient since the project was in large part motivated by equity concerns and was implemented in a relatively less developed part of the country.

6.8 Transportation. ERRs were estimated for the Jindo bridge, the Dolsan bridge and the Yeosu commercial road. All three components experienced significant cost increases over appraisal estimates due to higher land costs in the case of the Yeosu commercial road and higher construction costs in the case of the two cable stay bridges. The Bank was aware of the cost increases for the bridges when tenders were received and re-estimated the respective ERRs which, though lower than at appraisal, were considered acceptable. Savings in vehicle operating costs and passenger time costs were taken as the project benefits for all three components. Table 1 shows the cost increase involved in each component and compares the re-evaluated ERRs with those estimated at appraisal and at the time of contract award for the bridges.

**TABLE 1: Estimated and Actual Returns for the Project
Transport Components
(%)**

	Cost Increase a_/	ERR		
		Appraisal	Revised b_/	PCR
Jindo Bridge	93	16	14	18
Dolsan Bridge	477	29	12	12
Yeosu Commercial Rd	180	29	-	14

a_/ Increase in actual cost compared to appraisal costs including price and physical contingencies.

b_/ Obtained from Memorandum to Files dated January 27, 1981.

6.9 Industrial Estate. Construction of the Gwangju industrial estate and associated water works was completed at end-1983. Sales performance of the industrial estate has been good, and was completed by mid-1986. Almost half the estate (170,000 py or 47%) was sold by end-1983 (i.e., before the estate was completed) and over 80% (305,359

py) by end-1984. The initial sales price was W 50,000 per py which was gradually increased to W 70,000 per py by 1986. Sales of the standard factories began in 1983 and were completed by 1985. Factory prices started at W 200,000 in 1983 and were increased to W 264,000 by 1986. The average sales price of the industrial land was about W 55,800 per py compared to an average development cost of W 54,900. As a matter of policy, the sales price of the land was set to recover only the development costs since the industrial estate was built to promote manufacturing development rather than to make profits.

6.10 As at appraisal, the projected revenues from the sales of land and factories, property taxes and water charges were used to estimate economic benefits. Property values were assumed to increase at 3% per annum in real terms, given the expected growth of Gwangju City. On this basis, the ERR for the industrial estate is 9%.

6.11 Housing Estate. Housing estates developed under the first regional project (i.e., the Secondary Cities Regional Project) went on sale during the late 1970s when Korea was experiencing a rapid increase in land prices and were sold out almost immediately. Based on this experience, the cities included in the Second Regional Project anticipated a short sales period and expected to finance their share of project costs through pre-sales. The marketing plan for the housing estates was discussed with the Bank in January 1982.

6.12 However, actual sales of the housing estates did not proceed as rapidly as the cities had expected, which exacerbated their already tight budgetary situation arising from the economic recession (para. 4.3). Several factors made potential buyers wary of committing funds for sites yet to be developed as they had done in the past. First and foremost, the stabilization of land prices in the early 1980s and the general economic recession dampened demand for housing. Second, the proposed sites were located some distance from the center of the city and, in the case of the Gwangju and Mogpo, the sites lacked access to public transport. Third, the Gwangju housing estate was expected to accommodate workers from the Gwangju industrial estate, which was still under construction when the housing estate was completed.

6.13 Actual sales took five years for the Gwangju and Mogpo housing estates and six years for the Yeosu housing estate. The average sales prices for the different types of lot are shown in Table 2 below.

**TABLE 2: Average Sales Price Per Lot by Type and Housing Estate
(W million)**

	Gwangju	Mogpo	Yeosu
27 py Corehouse	6.5	7.1	7.8
30 py Corehouse	8.3	9.0	9.4
General Lots	7.3	12.9	11.1
Commercial Lots	17.9	19.9	37.2

Source: Letter from Y. C. Koh dated June 10, 1987.

As at appraisal, the re-evaluated ERR was estimated using sales values of the general, commercial and public lots and imputed rental values for the 9 py and 12 py corehouses as the project benefits. Property values were assumed to grow at 3% per annum in real terms in line with the overall development of the cities. On this basis, the ERRs were re-estimated as follows: Gwangju housing estate, 11%; Mogpo housing estate, 7%; and Yeosu housing estate, 16%.

VII. LESSONS LEARNED

7.1 Experience gained under the Second Gwangju Regional Development Project provided the Bank with additional guidance in designing future regional projects. The project was, of course, only part of a more extensive government effort to channel resources to the region, and its impact on the region should be considered in that context. Since data on the regional distribution of government budgets is not readily available in Korea, total public investment in the region has been roughly estimated by using the total value of civil engineering work contracted in Jeonra Nam Province as a proxy for overall public investment. Considering only civil engineering contracts for forestry conservation, flood control, dams, irrigation, water supply and sewerage, roads and bridges, and land development -- all typical government activities -- but excluding construction of housing and factories, between 1980 and 1985, civil engineering contracts in Jeonra Nam Province totaled W 1,232.7 billion. With total civil works carried out under the project (excluding aquaculture) costing W 84.7 billion, the project represented only about 7% of all civil engineering contracts in Jeonra Nam Province during the project period. The project's impact was therefore somewhat circumscribed relative to the total regional development effort. In order to promote development in a specific region, the Government needs to consider the total amount of central government funds being invested in that region. In view of this need, future regional development projects should probably encourage the Government to prepare a regional breakdown of the development budgets, which

would highlight the total amount of central government resources being provided to different parts of the country and allow for better coordination among the various ministries and agencies.

7.2 However, this does not necessarily mean that there is no role for separate regional development projects. Regional disparities are primarily political and social problems. Less developed regions are generally at a comparative disadvantage from an economic point of view. Jeonra Nam Province was not able to diversify out of agriculture into manufacturing because it was located farthest away from Seoul and Busan, the country's two main economic centers. Regional development projects are useful in that, by being a separate activity solely for that region, they can be easily identified as an effort to do something "special" to help a certain area of the country.

7.3 While the project may not have been large relative to the overall investment in the region, it did have a significant impact on the investment programs of the project cities. The project provided the cities with an additional source of funds to tap for their development projects. Table 3 compares project costs with estimated capital formation (for both General and Special Accounts) in the three project cities for 1980 to 1985. The overall finances of the project cities are summarized in Annex 9. The project is estimated to have accounted for between 23% of city investments in Gwangju to 41% of investments in Yeosu between 1980 and 1985. It can also be observed that the project's share is greater in the smaller cities with relatively smaller overall investment levels.

**TABLE 3: Comparison of Project Investment Costs to
Estimated Capital Formation for 1980 to 1985
(in W billion)**

	Gwangju	Mogpo	Yeosu
Project Investments (A)	30.0	22.3	11.4
Capital Formation (B)	131.9	56.4	27.4
Share of A to B	23%	39%	41%

Source: Annex 9.

7.4 Finally, the project indicated some of the drawbacks of taking a top down, "convoy" approach where all project components are expected to be prepared, appraised and implemented simultaneously. Some components became higher priority, were prepared earlier than the rest and required separate sources of funding, e.g., the water source development, transmission and treatment facilities which were financed with savings from the first regional project (para. 2.2). Other

priority components, such as the aquaculture component, were identified when preparation of the other components was well advanced and were included without sufficient preparation. In the future, multi-component regional projects should be designed to allow maximum flexibility to react to changing local priorities.

7.5 In sum, future regional development projects should place more emphasis on developing an institutional framework for identifying and implementing development projects in the region. In addition to central government investments which will continue to be an important part of the project, the project might also aim at developing mechanisms to:

- (a) regionalize central government resource allocations by preparing regional breakdowns of annual budgets (para. 7.1); and
- (b) implement local government (provincial, city, county) projects. This might necessitate development of a financing scheme, e.g., a Regional Development Fund, to provide the local governments with the capability to implement their own projects. If the technical capability of the local government is weak, the project may require a central government agency, such as the Ministry of Construction, to carry out the work on behalf of the local government or may even require the establishment of a separate agency, e.g., a Regional Development Corporation.

It is therefore suggested that regional development projects take a program approach and aim at establishing the rules for project funding rather than the "convoy" approach of preparing, evaluating and implementing all the components simultaneously.

KOREA
SECOND GWANGJU REGIONAL PROJECT (LW 1750-K0)
PROJECT COMPLETION REPORT

Appraisal and Actual Implementation Schedule

		1979				1980				1981				1982				1983				1984				1985			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Gwangju Housing Estate	Appraisal	=====				ttttttt																							
	Actual					tttttttt																							
Mogpo Housing Estate	Appraisal	=====				ttttttt+++++																							
	Actual					tttttttt																							
Yeosu Housing Estate	Appraisal	=====				ttttttt																							
	Actual					tttttttt																							
Gwangju Industrial Estate	Appraisal	=====				tttttttt																							
	Actual					tttttttttt																							
Mogpo Water Supply	Appraisal	=====	ttttttt																										
	Actual		tt																										

===== Engineering Design Preparation
 !!!!! Tendering and Award
 +++++ Land Filling and Ground Settlement
 ##### Construction/Implementation

- 22 -

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Comparison of Appraisal and Actual Project Costs

Components	Appraisal Estimate				Actual			
	Local	Foreign	Total	% Foreign Exchange	Local	Foreign	Total	% Foreign Exchange
Housing Estate, Gwangju	4,091	2,616	6,707	39%	6,408	3,613	10,021	36.1%
Housing Estate, Mogpo	2,392	2,169	5,561	39%	7,440	4,321	11,761	36.7%
Housing Estate, Yeosu	2,351	1,440	3,791	38%	5,633	2,350	7,983	29.4%
Juksan Residential	-	-	-	-	1,805	828	2,633	31.5%
Industrial Estate, Gwangju	8,524	5,114	13,638	39%	13,243	6,783	20,026	33.9%
Industrial Estate, Mogpo	3,869	2,579	6,448	40%	0	0	0	-
Access Road	1,884	1,541	3,425	45%	2,955	1,993	4,948	40.3%
Mogpo Water Supply	2,060	1,979	4,039	49%	3,391	2,802	6,193	45.2%
Yeosu Water Distribution	467	4	882	47%	282	282	564	50.0%
Narodo Development	205	149	354	42%	217	143	360	39.8%
Mogpo Drainage	-	-	-	-	1,078	588	1,666	35.3%
Yeosu Commercial Road	1,008	301	1,309	23%	2,343	468	2,811	16.6%
Dolsan Bridge	1,060	1,464	2,524	58%	7,783	10,199	17,982	57.0%
Jindo Bridge	1,312	1,887	3,199	59%	4,769	6,841	11,610	58.9%
Narodo Terminal (Ferry)	-	-	-	-	212	169	381	41.4%
Shrimp Storage (Inja Island)	451	288	739	39%	163	241	404	59.7%
Aquaculture	1,221	781	2,002	39%	169	678	847	80.0%
Technical Assistance	873	1,310	2,183	60%	1,884	2,825	4,709	60.0%
Base Cost	32,768	24,033	56,801	42%				
Physical Contingencies	4,012	2,788	6,800	41%				
Price Contingencies	6,784	4,714	11,498	41%				
Total Contingencies	10,796	7,502	18,298	41%				
TOTAL PROJECT COST	43,564	31,535	75,099	42%	59,695	15,124	104,819	43.0%
	=====	=====	=====		=====	=====	=====	

- 23 -

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KD)

PROJECT COMPLETION REPORT

Financing Plan
(w million)

	IBRD	MDC	City	KDB	KHB	Others	Total
Gwangju Housing Estate	3,800	-	451	-	5,770	-	10,021
Mogpo Housing Estate	4,359	-	2,288	-	5,114	-	11,761
Yeosu Housing Estate	2,460	-	1,300	-	4,223	-	7,983
Juksan Land Re-adjustment	808	-	1,825	-	-	-	2,633
Gwangju Industrial Estate	7,787	-	12,239	-	-	-	20,026
Access Road	1,926	3,022	-	-	-	-	4,948
Mogpo Water Supply	2,126	-	2,007	2,060	-	-	6,193
Yeosu Water Supply	237	-	181	146	-	-	564
Narodo Water Supply	119	-	-	241	-	-	360
Mogpo Drainage	941	-	725	-	-	-	1,666
Yeosu Commercial Rd.	599	-	2,212	-	-	-	2,811
Jindo Bridge	4,115	7,495	-	-	-	-	11,610
Dolsan Bridge	5,339	12,563	-	-	-	-	17,902
Narodo Terminal	37	224	-	-	-	-	381
Aquaculture	730	-	-	-	-	117	847
Shrimp Storage	168	186	-	-	-	50	404
T/A	3,255	1,454	-	-	-	-	4,709
	38,926	24,944	23,228	2,447	15,107	167	104,819

Others = NFFC and Co-operatives

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Disbursement of Loan by Category
(US\$ Equivalent)

Category	Amount allocated in Loan Agreement	%	Amount disbursed as of 12/31/85	%
Civil Works	40,000,000	61.5%	46,018,287.88	89.9%
Equipment	2,030,000	3.1%	921,564.07	1.8%
Aquaculture Credit	450,000	0.7%	0.00	0.0%
Consultant's Services & Studies	5,800,000	8.9%	4,174,137.35	8.2%
Overseas Training	200,000	0.3%	85,671.99	0.2%
Unallocated	16,520,000	25.4%		
TOTAL	65,000,000	100.0%	51,199,661.29	100.0%
Cancellation			13,800,338.71 a/	

a/ US\$ 12.78 million was cancelled on October 9, 1984 and US\$1.02 was cancelled on December 18, 1985.

- 25 -

KOREA
SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)
PROJECT COMPLETION REPORT
Estimated and Actual Accumulated Disbursements
(US\$ Million)

Semester Ending	Appraisal Estimate	Actual	% Disbursed
December 31, 1979	0.30	0.00 a/	0.0%
June 30, 1980	1.50	0.00	0.0%
December 31, 1980	6.90	1.41	2.2%
June 30, 1981	16.50	4.06	6.2%
December 31, 1981	28.10	7.96	12.2%
June 30, 1982	41.30	11.81	18.2%
December 31, 1982	52.40	18.20	28.0%
June 30, 1983	63.20	24.69	38.0%
December 31, 1983	65.00	41.32	63.6%
June 30, 1984		46.85	72.1%
December 31, 1984		50.27	77.3%
June 30, 1985		50.77 b/	78.1%
December 31, 1985		51.20 c/	78.8%

a/ Loan became effective February 15, 1980.

b/ Loan closing date. Disbursements were processed upto December 1985 when the loan was officially closed.

c/ Out of a loan of US\$65.00 million, US\$12.78 million and US\$1.02 million were cancelled on 9/28/84 and 12/18/85, respectively.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 175B-KO)

PROJECT COMPLETION REPORT

Summary of Contracts
(Won Millions)

Subject	Firm	Bid Announcement	Bidding Date	Signing Date	Start Date	End Date	Original Contract Amount	Final Contract Amount
Gwangju Housing Estate	Kuk Dong Construc.Co	10/06/80	11/20/80	01/15/81	01/20/81	10/03/84	9,130	8,943
Mogpo Housing Estate	Miryung Construction	10/06/80	11/20/80	12/20/80	12/26/80	09/21/83	6,575	10,337
Yeosu Housing Estate	Kumgang Company	10/06/80	11/20/80	12/20/80	12/26/80	04/27/83	4,976	5,760
Gwangju Industrial Estate	Hanlla Construction Ltd	10/06/80	11/20/80	01/15/81	01/20/81	12/20/83	7,723	15,702
Yeosu Commercial Road	Hanlla Construction Ltd	03/12/82	04/12/82	05/03/82	05/06/82	02/25/83	871	936
Yeosu Water Supply	Kyung Hyang Construction	07/29/80	09/13/80	10/06/80	10/18/80	12/28/81	781	564
Narodo Water Supply	Namdo Construction Ltd.	10/06/80	11/20/80	12/20/80	12/26/80	12/25/81	334	318
Narodo Terminal	Namdo Construction Ltd.	07/16/80	09/13/80	10/06/80	10/06/80	10/31/81	343	376
Mogpo Water Supply	Sam Bo Construction	10/29/79	12/01/79	12/29/79	12/29/79	12/28/81	4,239	5,094
Inja Shrimp Storage	Dong Gwang Construction	11/10/80	12/10/80	12/20/80	12/26/80	08/07/82	477	402
Gwangju Access Road	Han Kook Kun Up Const.	10/29/79	12/01/79	12/28/79	12/28/79	12/20/83	3,245	4,614
Jindo Bridge	Hyundai Construction Co.	09/10/80	11/17/80	12/20/80	12/26/80	12/30/84	8,866	11,401
Dolsan Bridge	Daelim Industrial Co.	09/10/80	11/17/80	12/20/80	12/26/80	12/25/84	9,747	16,998
Mogpo Drainage	Kyung Nam Enterprise	09/01/83	09/16/83	10/04/83	10/10/83	07/05/84	1,229	1,306
Juksan Land Readjustment	Hankuk Pavement Constr.	11/22/83	12/10/83	12/24/83	12/26/83	11/30/85	2,010	1,982
Detailed Design for Ph II	T.A.E.			12/30/78	12/30/78	04/05/80	269	269
Construction SPN - Ph II	KECC			12/17/80	12/23/80	12/31/83	338	287
Construction SPN Bridges	R.P.T.			05/29/81	06/01/81	04/15/85	1,429	2,255
Cheonju - Feasibility	KECC/SIGMA			05/18/81	05/18/81	05/13/82	768	759
Cheonju Design	KECC			12/22/82	12/29/82	12/26/83	918	849
Island Development Study	Dohwa Technical			07/04/83	07/04/83	04/21/84	98	94
Evaluation	Chonnam University			05/09/84	05/10/84	03/28/85	89	86

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Covenants in Loan Agreement

Section	Activity	Remarks
4.05(b)	MCG shall gradually raise average rate of tariffs for water supplied to communities outside Mogpo City so that by fiscal year 1985, the rate shall be adequate to generate revenue sufficient to cover the full cost of production, treatment and transmission of water supplied to the communities.	Water rates were raised in 1979 and in 1981.
4.05(c)	GCG shall raise the average rate of tariff for water supplied at Narodo Islands by at least 5% annually in real terms until rate is adequate to recover capital expenditures and operating and maintenance cost.	Water rates were raised in 1979 and in 1981.
4.06(a)	(GCG, YCG, GGC, and NFFC shall operate and maintain facilities transferred to them.	Complied with.
4.06(a)	(GCG shall make available staff, equipment and other resources for proper operation and maintenance of transferred facilities.	Complied with.
4.07	The Borrower shall (a) cause the Daedong dam to be periodically inspected; and (b) cause Jeonora Nam Provincial Government and MCG to prepare & furnish to the Bank a report on such arrangements by December 31, 1980.	Draft maintenance plan was submitted in Sep. 1981.
5.01	Subsidiary Loan Agreement shall be executed on behalf of Borrower and GCG, MCG, YCG, GGC and NFFC as an additional condition of effectiveness.	Subsidiary Loan Agreement was executed in Nov. 79,
5.02	Subsidiary Loan Agreement shall be authorized or ratified by the Borrower and GCG, MCG, YCG, GGC and NFFC and shall be legally binding.	Legal opinion was issued December 1979 and the loan became effective on February 15, 1980.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KD)

PROJECT COMPLETION REPORT

Covenants in Loan Agreement

Section	Activity	Remarks
4.03(c)	GCG shall allocate at least one third of the net residential area of any future housing development, in the vicinity of new access road, to low-income housing to be sold to families with incomes in the lower half of Gwangju City Household income distribution at the time of sales.	Not applicable. No new residential areas were developed by the city during project period.
4.04(a)	The Borrower shall take all measures to ensure the availability of adequate and timely water supply to housing and industrial estates to be constructed in Gwangju City.	Complied with. Due to the delay in completion of Dong Buk Dam, a smaller water supply project was added to the industrial estate.
4.04(b)	The Borrower shall take all measures to ensure the completion of paving of highways which connect Jindo with Haenam, Gwangju and Mogpo by the time the bridge construction has been completed.	Haenam-Gwangju and Gwangju-Mogpo sections were paved. Work began in 1982 on Jindo-Haenam & due to budget constraints, the road was not going to be ready, but then Govt. made resources available in 1984 Supp. and 1985 budget to get the roads ready.
4.05(a)	Beginning with fiscal year 1981 MCG and YCG shall raise the average rates of tariff by at least 5% annually in real terms until the operations become financially viable (sum of gross revenues from all sources, consumer contributions in aid of construction and net operating income shall equal or exceed the sum of all expenditures attributable to operation, maintenance and administration (but excluding depreciation and other non-cash operating charges), working capital requirements, payments of interest and debt charges, taxes, cash dividends and other cash distribution of surplus, any other capital expenditures for which no financing has been secured and any cash deficits incurred in any previous fiscal year).	Water rates were raised in 1979 and in 1981.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Covenants in Loan Agreement

Section	Activity	Remarks
3.09(a)	The Borrower shall by December 31, 1980 cause GCG, MCG and YCG to prepare and furnish to the Bank: (a) a marketing plan for allocation and sale of residential plots and core houses and for utilization of profits generated by the sale; and (b) a management plan.	Complied with. Due to the delay in construction, the draft marketing plan was submitted in Sep. 81. Revised plan incorporating the Bank's comments were discussed with the mission during Jan. 82. Due to the adverse economic situation, sales were slow, so eligibility criteria were revised to promote sales.
3.09(b)	The Borrower shall by December 31, 1980 cause GCG and MCG to prepare and furnish to the Bank: (a) a marketing plan for the allocation and sale of industrial plots and factory buildings and for utilization of profits generated by the sale; and (b) a management plan.	Same remarks as 3.09(a) above.
4.02(a)	GCG, MCG, YCG, GGC, NFFC and IRCO shall maintain separate reports and accounts reflecting all expenditures.	Complied with.
4.02(c)	Reports and Accounts to be audited for each fiscal year and to be furnished to the Bank not later than six months after the end of each fiscal year.	Complied with.
4.03(a)	YCG shall (a) furnish to the Bank a draft urban development plan for Dolsan Island by Dec. 31, 79, and (b) take appropriate measures for payment of adequate compensation and secure alternative accommodation and sites for families/enterprises displaced by construction of Yeosu Commercial Road.	(a) A Master Plan for Dolsan New Town was prepared in October 1980. (b) Yeosu city reaffirmed that priority in plot allocation will be given to those displaced businesses at the fishery harbor industrial site and new housing estate.
4.03(b)	MCG shall allocate at least half of the net residential area of any future housing development in the North Port area for construction of lower income housing to be sold to families with incomes in the lower half of Mogpo City Household income distribution at the time of sales.	The North Port area was developed as part of this project. Mogpo City utilized savings in the loan due to cancellation of the Mogpo Industrial Estate to carry out land readjustment scheme in the area.

KOREA

SECOND GWANGJU REGIONAL PROJECT (LOAN 1758-KO)

PROJECT COMPLETION REPORT

Covenants in Loan Agreement

Section	Activity	Remarks
3.02	The Borrower shall enter into subsidiary Loan Agreement with GCG, MCG, YCG and NFFC under terms and conditions satisfactory to the Bank, including those in Schedule 5, and providing for repayment to the Borrower by the above of all accounts equivalent to the proceeds of the Loan withdrawn.	Complied with. Subsidiary loan agreements were entered into during November 1979 and the project became effective on February 15, 1980.
3.03	The Borrower shall cause to be transferred, under agreements satisfactory to the Bank, all facilities promptly upon completion of construction, to the various agencies and city governments.	Complied with. All facilities were handed over to respectable local governments & operating agencies.
3.04	The Borrower shall provide and cause its relevant departments, KDB & KHB to provide sufficient funds to ensure timely and efficient carrying out of the project.	Complied with although due to the economic recession, the project suffered from the overall tight budgets during 1980/81.
3.05	The Borrower shall employ consultants satisfactory to the Borrower and the Bank to assist in preparation of plans, specs and bidding documents and for supervision of construction.	Detail design was completed by TAE/KECC. Contract supervision was carried out by KECC for all civil works except Jindo and Dolsan bridges which were carried out by RPT.
3.07	The Borrower shall promptly furnish to the Bank plans, specs., reports, training programs, contract documents, and work and procurement schedules and any modifications or additions to in such detail as the Bank may request.	Complied with.
3.08	The Borrower shall acquire all land and rights required for carrying out the project and furnish the evidence to the Bank.	Complied with.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Jindo Bridge Component

(in won millions, constant 1980 prices)

Year	Costs		Benefits			Net Benefits
	Develop- ment	Mainte- nance	Total	UOC Savings	Time Savings	
1980	115.0		115.0			(115.0)
1981	924.5		924.5			(924.5)
1982	1,730.1		1,730.1			(1,730.1)
1983	3,617.0		3,617.0			(3,617.0)
1984	2,930.9		2,930.9			(2,930.9)
1985	15.9	3.8	19.7	1.6	598.5	580.4
1986		3.8	3.8	4.9	686.7	687.8
1987		3.8	3.8	9.3	794.2	799.8
1988		3.8	3.8	15.7	923.2	935.1
1989		3.8	3.8	24.4	1,081.1	1,101.7
1990		3.8	3.8	36.2	1,284.4	1,316.9
1991		3.8	3.8	52.0	1,519.7	1,567.8
1992		3.8	3.8	72.7	1,806.2	1,875.2
1993		3.8	3.8	100.5	2,162.6	2,259.3
1994		15.5	15.5	136.9	2,603.4	2,724.8
1995		3.8	3.8	187.1	3,190.0	3,373.3
1996		3.8	3.8	251.4	3,890.7	4,138.4
1997		3.8	3.8	335.4	4,769.1	5,100.8
1998		3.8	3.8	445.6	5,882.3	6,324.1
1999		3.8	3.8	589.1	5,787.0	6,372.4
2000		3.8	3.8	785.5	7,707.1	8,488.9
2001		3.8	3.8	1,034.0	11,484.1	12,514.3
2002		3.8	3.8	1,516.9	15,715.7	17,228.8
2003		3.8	3.8	1,780.3	18,217.7	19,994.2
2004		15.5	15.5	2,089.0	21,126.4	23,199.8

Economic Rate of Return = 18.3%

- Note: 1. Development costs include land, construction and design and supervision, but exclude taxes (estimated to be 5% of construction costs).
2. Maintenance costs and benefits obtained from Chonnam National University "Development Impact Analysis of Kwangju Regional Projects" March 1985.

KOREA

SECOND GUANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Dolsan Bridge Component

(in won millions, constant 1980 prices)

Year	Costs		Benefits		
	Develop- ment	Mainte- nance	Total	UOC Savings	Time Savings
					Net Benefits
1980	0.0		0.0		0.0
1981	1,095.7		1,095.7		(1,095.7)
1982	1,635.0		1,635.0		(1,635.0)
1983	3,699.6		3,699.6		(3,699.6)
1984	7,159.4		7,159.4		(7,159.4)
1985	54.3	3.8	58.0	583.9	217.6
1986		3.8	3.8	559.5	241.5
1987		3.8	3.8	615.1	265.5
1988		3.8	3.8	670.9	289.5
1989		3.8	3.8	725.8	313.3
1990		3.8	3.8	811.4	337.3
1991		3.8	3.8	845.9	365.1
1992		3.8	3.8	955.0	486.1
1993		3.8	3.8	1,406.2	607.1
1994		15.5	15.5	1,687.3	728.5
1995		3.8	3.8	1,968.4	849.8
1996		3.8	3.8	2,250.5	971.5
1997		3.8	3.8	2,540.4	1,096.8
1998		3.8	3.8	2,832.0	1,222.7
1999		3.8	3.8	3,124.5	1,348.9
2000		3.8	3.8	3,418.9	1,476.1
2001		3.8	3.8	3,714.9	1,603.9
2002		3.8	3.8	4,012.1	1,732.2
2003		3.8	3.8	4,312.4	1,861.9
2004		15.5	15.5	4,634.9	2,014.7
Economic Rate of Return =					11.5%

- Note: 1. Development costs include land, construction and design and supervision, but exclude taxes (estimated to be 5% of construction costs).
2. Maintenance costs and benefits obtained from Chonnam National University "Development Impact Analysis of Kwangju Regional Projects" March 1985.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Yeosu Commercial Component

(in won millions, constant 1980 prices)

Year	Costs		Benefits			Net Benefits
	Develop- ment	Mainte- nance	Total	UDC Savings	Time Savings	
1980						
1981						
1982	1,753.7		1,753.7			(1,753.7)
1983	498.4		498.4			(498.4)
1984		1.9	1.9	36.1	20.5	54.7
1985		1.9	1.9	45.8	26.3	70.2
1986		2.0	2.0	57.6	33.3	88.9
1987		2.0	2.0	70.4	40.8	109.3
1988		2.0	2.0	85.3	49.7	133.1
1989		2.0	2.0	102.9	60.0	160.9
1990		2.0	2.0	156.9	104.2	259.1
1991		2.0	2.0	221.8	157.2	377.0
1992		2.1	2.1	230.5	219.8	448.2
1993		2.1	2.1	389.3	294.2	681.4
1994		2.2	2.2	499.4	384.0	881.3
1995		2.3	2.3	549.8	428.2	975.8
1996		2.3	2.3	607.5	478.8	1,084.0
1997		2.3	2.3	642.9	512.7	1,153.3
1998		2.4	2.4	681.0	549.2	1,227.9
1999		2.5	2.5	647.5	589.2	1,234.2
2000		2.5	2.5	636.8	632.8	1,267.2
2001		2.6	2.6	559.2	680.6	1,237.2
2002		2.6	2.6	526.1	732.9	1,256.4
2003		2.7	2.7	499.8	790.1	1,287.2
Economic Rate of Return =						14.0%

- Note: 1. Development costs include land, construction and design and supervision, but exclude taxes (estimated to be 5% of construction costs).
2. Maintenance costs and benefits obtained from Chonnam National University "Development Impact Analysis of Kwangju Regional Projects" March 1985.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Gwangju Industrial Estate Component

(in won millions, constant 1980 prices)

Year	Costs			Benefits				Net Benefits
	Develop- ment	Mainte- nance	Total	Land Sales	Factory Sales	Water Revenues	Local Tax Revenues	
1980								
1981	3,869.5		3,869.5					(3,869.5)
1982	4,846.3		4,846.3	166.5				(4,679.7)
1983	6,440.3		6,440.3	7,153.0	182.0			894.7
1984	824.7		824.7	6,902.7	395.4			6,473.5
1985		70.7	70.7	547.0	286.5			762.8
1986		70.7	70.7	798.5		169.7		897.5
1987		70.7	70.7			169.7	1.2	100.2
1988		70.7	70.7			169.7	55.2	154.2
1989		70.7	70.7			169.7	111.3	210.3
1990		70.7	70.7			169.7	117.9	216.9
1991		70.7	70.7			169.7	124.5	223.5
1992		70.7	70.7			169.7	124.5	223.5
1993		70.7	70.7			169.7	124.5	223.5
1994		70.7	70.7			169.7	124.5	223.5
1995		70.7	70.7			169.7	124.5	223.5
1996		70.7	70.7			169.7	124.5	223.5
1997		70.7	70.7			169.7	124.5	223.5
1998		70.7	70.7			169.7	124.5	223.5
1999		70.7	70.7			169.7	124.5	223.5
2000		70.7	70.7			169.7	124.5	223.5
2001		70.7	70.7			169.7	124.5	223.5
2002		70.7	70.7			169.7	124.5	223.5
2003		70.7	70.7			169.7	124.5	223.5
2004		70.7	70.7			169.7	124.5	223.5

Economic Rate of Return = 0.5%

- Notes: 1. Development costs include land, construction and design and supervision, but exclude taxes (estimated to be 5% of construction costs).
2. Maintenance costs (including estimate of water supply operations) and water revenues based on discussions with Gwangju City officials.
3. Sales of land and factories and unit prices were Y.C. Koh's analysis (letter of June 10, 1987).
4. Industrialist are exempted from paying local taxes (Property and City Planning Planning tax at 0.6% and 0.2% respectively) for 5 years.

KOREA

SECOND GUANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Guangju Housing Estate Component

(in won millions, constant 1980 prices)

Year	Costs		Benefits		
	Develop- ment	Mainte- nance	Total	Commercial Sales	Imputed Rents
1980					
1981	577.1		577.1		(577.1)
1982	944.4		944.4		(944.4)
1983	5,830.7		5,830.7	555.5	90.6
1984	453.8		453.8	1,167.2	594.5
1985		129.4	129.4	547.0	594.5
1986		129.4	129.4	328.1	612.3
1987		129.4	129.4	1,196.0	639.7
1988		129.4	129.4		649.6
1989		129.4	129.4		669.1
1990		129.4	129.4		689.2
1991		129.4	129.4		709.9
1992		129.4	129.4		731.2
1993		129.4	129.4		753.1
1994		129.4	129.4		775.7
1995		129.4	129.4		799.0
1996		129.4	129.4		822.9
1997		129.4	129.4		847.6
1998		129.4	129.4		873.0
1999		129.4	129.4		899.2
2000		129.4	129.4		926.2
2001		129.4	129.4		954.0
2002		129.4	129.4		982.6
2003		129.4	129.4		1,012.1
2004		129.4	129.4		1,042.5

Economic Rate of Return = 10.9%

- Note: 1. Development costs include land, construction and design and supervisi but excluded taxes (estimated to be 5% of construction costs).
2. Sales data taken from Y.C. Koh's analysis (letter of June 10, 1987).
Land values are assumed to increase at 3% p.a. in real terms.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Mogpo Housing Estate Component

(in won millions, constant 1980 prices)

Year	Costs		Benefits			
	Develop- ment	Mainte- nance	Total	Commercial Sales	Imputed Rents	Net Benefits
1980					0.0	
1981	2,367.1		2,367.1		0.0	(2,367.1)
1982	2,974.7		2,974.7	30.1	0.0	(2,944.7)
1983	2,483.4		2,483.4	46.4	78.3	(2,358.7)
1984		120.0	120.0	896.8	594.5	1,371.7
1985		120.0	120.0	203.3	594.5	677.0
1986		120.0	120.0	428.6	612.3	920.9
1987		120.0	120.0		630.7	510.7
1988		120.0	120.0		649.6	529.6
1989		120.0	120.0		669.1	549.1
1990		120.0	120.0		689.2	569.2
1991		120.0	120.0		709.9	589.9
1992		120.0	120.0		731.2	611.2
1993		120.0	120.0		753.1	633.1
1994		120.0	120.0		775.7	655.7
1995		120.0	120.0		799.0	679.0
1996		120.0	120.0		822.9	702.9
1997		120.0	120.0		847.6	727.6
1998		120.0	120.0		873.0	753.1
1999		120.0	120.0		899.2	779.2
2000		120.0	120.0		926.2	806.2
2001		120.0	120.0		954.0	834.0
2002		120.0	120.0		982.6	862.6
2003		120.0	120.0		1,012.1	892.1
2004		120.0	120.0		1,042.5	922.5

Economic Rate of Return = 6.7%

- Notes: 1. Development costs include land, construction and design and supervisi but excluded taxes (estimated to be 5% of construction costs).
2. One quarter of the estimated cost of additional Juksan Drainage Works (est. cost w. 2,727 million) exclude from costs since benefits will accrue to area as a whole.
3. Sales data taken from Y.C. Koh's analysis (letter of June 10, 1987). Land values are assumed to increase at 3% p.a. in real terms.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

ECONOMIC RE-EVALUATION

Yeosu Housing Estate Component

(in won millions, constant 1980 prices)

Costs		Benefits			
Develop- ment	Mainte- nance	Total	Commercial Sales	Imputed Rents	Net Benefits
				0.0	
2,544.2		2,544.2		0.0	(2,544.2)
3,247.4		3,247.4	462.2	0.0	(2,785.2)
735.0		735.0	1,133.0	338.4	736.4
	83.4	83.4	1,389.3	594.5	1,900.5
	83.4	83.4	558.6	594.5	1,069.8
	83.4	83.4	652.1	612.3	1,181.0
	83.4	83.4	398.7	630.7	946.0
	83.4	83.4		649.6	566.3
	83.4	83.4		669.1	585.8
	83.4	83.4		689.2	605.8
	83.4	83.4		709.9	626.5
	83.4	83.4		731.2	647.8
	83.4	83.4		753.1	669.7
	83.4	83.4		775.7	692.3
	83.4	83.4		799.0	715.6
	83.4	83.4		822.9	739.6
	83.4	83.4		847.6	764.3
	83.4	83.4		873.0	789.7
	83.4	83.4		899.2	815.9
	83.4	83.4		926.2	842.9
	83.4	83.4		954.0	870.6
	83.4	83.4		982.6	899.3
	83.4	83.4		1,012.1	928.7
	83.4	83.4		1,042.5	959.1
Economic Rate of Return =					15.8%

1. Development costs include land, construction and design and supervisi but excluded taxes (estimated to be 5% of construction costs).
2. Sales data taken from Y.C. Koh's analysis (letter of June 10, 1987). Land values are assumed to increase at 3% p.a. in real terms.

KOREA

SECOND GUANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

Guangju City Finances
(in million)

	1980	1981	1982	1983	1984	1985	Total
GENERAL ACCOUNT							
Revenues	25,811	33,591	33,420	37,075	40,575	54,858	225,330
Expenditures	24,090	32,177	31,362	34,147	36,644	49,390	207,811
Capital Formation	10,475	13,636	8,844	9,831	11,134	15,007	68,927
Deficit/Surplus	1,721	1,414	2,058	2,928	3,931	5,468	17,519
SPECIAL ACCOUNT							
Revenues	13,683	23,321	32,980	49,151	54,382	51,869	225,387
Expenditures	10,769	18,234	23,425	41,843	47,306	48,149	189,726
Deficit/Surplus	2,914	5,087	9,555	7,308	7,077	3,720	35,661
COMBINED							
Revenues	39,493	56,912	66,400	86,226	94,957	106,728	450,717
Expenditures	34,858	50,412	54,787	75,990	83,949	97,540	397,537
Capital Formation	15,158	21,363	15,450	21,878	25,507	29,637	131,855
Deficit/Surplus	4,635	6,501	11,613	10,236	11,007	9,188	53,180
Share of Capital Formation	43.5%	42.4%	28.2%	28.8%	30.4%	30.4%	33.2%

Source: MOHA Local Govt. Finance Y.B. (1981-85) and Municipal Y.B. (1986)

14-Jun-88

Note: a. 1985 General Account Capital Formation estimated using 1984 averages.

b. Combined capital formation estimated using General Account averages for the Special Account.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

Mogpo City Finances
(in w million)

	1980	1981	1982	1983	1984	1985	Total
GENERAL ACCOUNT							
Revenues	7,841	12,153	12,701	16,352	14,573	15,525	79,146
Expenditures	7,086	11,711	12,268	15,001	14,060	14,778	74,903
Capital Formation	2,874	5,818	4,322	6,844	5,433	5,710	31,001
Deficit/Surplus	755	442	434	1,352	513	747	4,242
SPECIAL ACCOUNT							
Revenues	5,726	10,612	9,660	15,046	13,855	14,931	69,830
Expenditures	4,990	9,929	9,186	13,963	11,097	12,097	61,263
Deficit/Surplus	736	683	474	1,083	2,758	2,833	8,568
COMBINED							
Revenues	13,567	22,765	22,362	31,398	28,428	30,456	148,976
Expenditures	12,076	21,640	21,454	28,964	25,157	26,875	136,166
Capital Formation	4,898	10,751	7,558	13,215	9,721	10,385	56,357
Deficit/Surplus	1,490	1,125	908	2,434	3,271	3,581	12,810
Share of Capital Formation	40.6%	49.7%	35.2%	45.6%	38.6%	38.6%	41.4%

Source: MOHA Local Govt. Finance Y.B. (1981-85) and Municipal Y.B. (1986)

14-Jun-88

Note: a. 1985 General Account Capital Formation estimated using 1984 averages.

b. Combined capital formation estimated using General Account averages for the Special Account.

KOREA

SECOND GWANGJU REGIONAL PROJECT

PROJECT COMPLETION REPORT

Yeosu City Finances
(in w million)

	1980	1981	1982	1983	1984	1985	Total
GENERAL ACCOUNT							
Revenues	5,698	8,412	8,568	9,349	9,425	12,267	53,719
Expenditures	5,312	7,294	7,887	8,523	8,341	11,241	48,598
Capital Formation	2,195	3,016	2,821	2,674	2,166	2,919	15,791
Deficit/Surplus	385	1,118	682	826	1,084	1,026	5,121
SPECIAL ACCOUNT							
Revenues	3,739	6,580	9,150	7,022	7,482	9,130	43,102
Expenditures	3,484	6,065	7,890	5,773	6,091	6,524	35,826
Deficit/Surplus	255	515	1,260	1,249	1,391	2,606	7,276
COMBINED							
Revenues	9,437	14,991	17,718	16,371	16,907	21,397	96,821
Expenditures	8,796	13,358	15,776	14,296	14,432	17,765	84,424
Capital Formation	3,635	5,524	5,643	4,485	3,748	4,613	27,432
Deficit/Surplus	640	1,633	1,942	2,075	2,474	3,632	12,397
Share of Capital Formation	41.3%	41.3%	35.8%	31.4%	26.0%	26.0%	32.5%

Source: MOHA Local Govt. Finance Y.B. (1981-85) and Municipal Y.B. (1986)

14-Jun-88

Note: a. 1985 General Account Capital Formation estimated using 1984 averages.

b. Combined capital formation estimated using General Account averages for the Special Account.



MINISTRY OF CONSTRUCTION
REPUBLIC OF KOREA

COMMENTS FROM THE BORROWER

Oct. 12, 1989

Mr. Alexander Nowicki
Division Chief
Operations Evaluation Dept.
World Bank

Dear Mr. Nowicki :

Re : Korea - Second Gwangju Regional Project
(Ln. 1758 - Ko)

Opinion on Project Completion Report

I appreciate your positive cooperation in completing
the Second Gwangju Regional Project.

I hope that the following opinion will be added to
your report

Following

o Where to be added

. 11, B , 2. 3, (b) Design Standards for Housing Estates

o Opinion to be added

. After expandable core houses of 9 pyong, about 30 sq. m,
and 12 pyong, about 40 sqm, were sold to the low

income group, most of occupants expanded their houses into more than 13 pyong, about 43 sq. m, past one or two years since they felt inconvenient in living there owing to the small size.

Truly yours


Choi, Gil - Dae

Director

Regional Planning Division
Ministry of Construction

I-RI REGIONAL CONSTRUCTION OFFICE

MINISTRY OF CONSTRUCTION, REPUBLIC OF KOREA

I-RI JEONRABUGDO KOREA

TEL I-RI 52 - 1233

Ref . Jikae - 30500 - *EP/4*

Aug. 29. 1989.

To : Alexander, Nowicki
Division Chief, Operations
Evaluation Dept, I B R D.

Re : Reply to Project Completion Report, Second Gwangju Regional Project
(In. 1758 - KO)

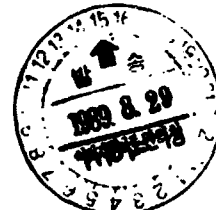
We have the pleasure of thanks for your positive cooperation in
implementation of above project.

We have no object about above project, which you prepared other than
followings.

Followings

- . For II B. 2.3, (b) Design Standards For Housing Estates:

Actual the Government idea was different with the Banks though, 9 PY
and 12 PY were decided and performed, and most of them were inconvenient to
live, therefore they extended to 13 PY or more within one or two years.
Therefore, it made proof of that the original Government idea was right.



Truly yours

Choichansik
Choi, Chan - sik

Director, I R C O